AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-8. (canceled).

9. (new): A method for exchanging data between two layers of a network stack in a data transmission system comprising a header compression and/or decompression mechanism, comprising the following steps:

for a transmission of the information from the network access level to the application package level, generating estimated original data and quantized additional information, and transmitting the two streams thereafter to a header compression step which generates packets containing reconstructed data and packets containing additional information; and

for a transmission of the information from the application package level to the network access level, generating useful data packets with compressed header on the basis of the packets including the useful data and the packets including the additional information and transmitting the two streams thus sent over the transmission channel.

10. (new): The method as claimed in claim 9, wherein for the transmission of the information flowing from the network access level to the application package level, comprising the following steps:

differentiating the information originating from the transmission channel or from the channel decoder into a stream of initial packets and a stream of previously quantized additional information,

transmitting the coded initial packets and the additional information to a header decompression step,

shaping the quantized additional information as a function of the characteristics of the protocol stack,

transmitting the two streams thus obtained to a source coding step.

11. (new): The method as claimed in claim 9, wherein for the transmission of the information flowing from the network access level to the application package level, comprising at least the following steps:

differentiating the information originating from the transmission channel or from the channel decoder into a stream of initial packets and a stream of previously quantized additional information,

transmitting the coded initial packets and the additional information to a header decompression step,

shaping the quantized additional information as a function of the characteristics of the protocol stack,

transmitting the two streams thus obtained to a source decoding step.

12. (new): The method as claimed in claim 9, wherein for the transmission of information flowing from the application package level to the network access level, comprising the following steps:

differentiating the packets originating from the protocol stack into a stream of initial packets and a stream of additional information packets,

compressing the headers of the initial packets and transmitting them to a channel coding step,

shaping the additional information by extracting some additional information for transmission to the channel coding step,

transmitting the stream generated by the channel coding for sending to the transmission channel.

13. (new): The method as claimed in claim 9, wherein for the transmission of information flowing from the application package level to the network access level, comprising the following steps:

differentiating the packets originating from the protocol stack into a stream of initial packets and a stream of additional information packets,

compressing the headers of the initial packets and transmitting them to a channel coding step of the access layer,

shaping the additional information by extracting some additional information for transmission to the channel decoding step,

transmitting the stream generated by the channel coding for sending over the transmission channel.

14. (new):   The method as claimed in claim 9, wherein the transmission of information flowing from the application package level to the network access level, and it comprises at least the following steps:

differentiating the packets originating from the protocol stack into a stream of initial packets and a stream of additional information packets,

compressing the headers of the initial packets and transmitting them to a channel coding step,

shaping the packets transporting the additional information quantized by header compression as a function of the characteristics of the protocol stack for transmission to the channel coding step,

transmitting the streams generated by the channel coding for sending over the transmission channel.

15. (new): The method as claimed in claim 9, wherein the decompression step consists in differentiating the packets originating from the transmission channel, reconstructing the original packets of data, transmitting the additional information generated to the channel coder or to the channel decoder.

16. (new): The method as claimed in claim 9, wherein the decompression step consists in differentiating the packets originating from the transmission channel, reconstructing the original

packets of data, generating additional packets containing the additional information and transmitting them to the application package level.

17. (new): The method as claimed in claim 10, wherein the decompression step includes differentiating the packets originating from the transmission channel, reconstructing the original packets of data, transmitting the additional information generated to the channel coder or to the channel decoder.

18. (new): The method as claimed in claim 11, wherein the decompression step includes differentiating the packets originating from the transmission channel, reconstructing the original packets of data, transmitting the additional information generated to the channel coder or to the channel decoder.

19. (new): The method as claimed in claim 10, wherein the decompression step includes differentiating the packets originating from the transmission channel, reconstructing the original packets of data, generating additional packets containing the additional information and transmitting them to the application package level.

20. (new): The method as claimed in claim 11, wherein the decompression step includes differentiating the packets originating from the transmission channel, reconstructing the original packets of data, generating additional packets containing the additional information and transmitting them to the application package level.

21. (new): The method as claimed in claim 15, wherein the decompression step includes differentiating the packets originating from the transmission channel, reconstructing the original packets of data, generating additional packets containing the additional information and transmitting them to the application package level.

22. (new): A method for exchanging data between two layers of a network stack in a data transmission system comprising a header compression and/or decompression mechanism, comprising the following steps:

for a transmission of the information from the application package level to the network access level, generating useful data packets with compressed header on the basis of the packets including the useful data and the packets including the additional information and transmitting the two streams thus sent over the transmission channel.

23. (new): The method as claimed in claim 22, wherein for the transmission of the information flowing from the network access level to the application package level, comprising at least the following steps:

differentiating the information originating from the transmission channel or from the channel decoder into a stream of initial packets and a stream of previously quantized additional information,

transmitting the coded initial packets and the additional information to a header decompression step,

shaping the quantized additional information as a function of the characteristics of the protocol stack,

transmitting the two streams thus obtained to a source decoding step.

24. (new): The method as claimed in claim 22, wherein for the transmission of information flowing from the application package level to the network access level, comprising the following steps:

differentiating the packets originating from the protocol stack into a stream of initial packets and a stream of additional information packets,

compressing the headers of the initial packets and transmitting them to a channel coding step of the access layer,

shaping the additional information by extracting some additional information for transmission to the channel decoding step,

transmitting the stream generated by the channel coding for sending over the transmission channel.

25. (new):   The method as claimed in claim 22, wherein the transmission of information flowing from the application package level to the network access level, and it comprises at least the following steps:

differentiating the packets originating from the protocol stack into a stream of initial packets and a stream of additional information packets,

compressing the headers of the initial packets and transmitting them to a channel coding step,

shaping the packets transporting the additional information quantized by header compression as a function of the characteristics of the protocol stack for transmission to the channel coding step,

transmitting the streams generated by the channel coding for sending over the transmission channel.